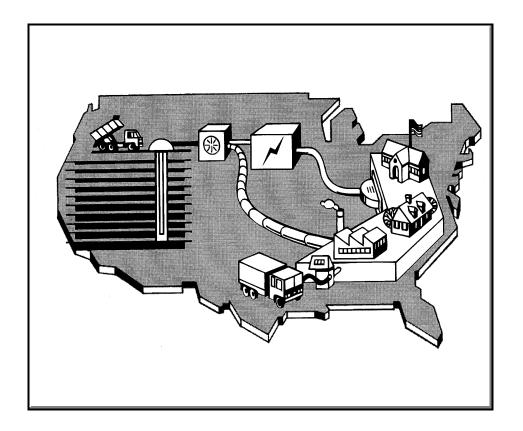


# **Landfill Gas-to-Energy Project Opportunities**

# **Landfill Profiles for the State of Oregon**





## **EPA Landfill Methane Outreach Program**



The EPA Landfill Methane Outreach Program, a key component of the United State's *Climate Change Action Plan*, encourages the use of landfill gas (LFG) as an energy resource. EPA assists utilities,

municipal and private landfill owners and operators, tribes, and state agencies in reducing methane emissions from landfills through the development of profitable landfill energy recovery projects. Methane captured from landfills can be transformed into a cost-effective fuel source for electricity, heat, boiler and vehicular fuel, or sale to a pipeline. EPA estimates there are approximately 200 landfill methane recovery projects in the U.S. and that up to 750 landfills could install economically viable landfill energy projects.

The Landfill Methane Outreach Program includes five important components: the State Ally, Energy Ally, Industry Ally, Community Partner, and Endorser programs. EPA establishes separate alliances with state agencies, energy providers (including investor-owned, municipal and other public power utilities and cooperatives), key trade and public sector associations, members of the landfill gas development industry (including developers, engineers, equipment vendors, and others) and local communities, municipalities and landfill owner/operators through a Memorandum of Understanding (MOU). By signing the MOU, each Ally/Partner acknowledges a shared commitment to the promotion of landfill gas-to-energy recovery at solid waste landfills, recognizes that the widespread use of landfill gas will reduce emissions of methane and other gases, and commits to undertake activities to enhance development of this resource. In return, EPA agrees to provide landfill gas-to-energy project assistance and public recognition of the Allies' and Partners' participation in the program.

#### Introduction

Since 1994 the U.S. EPA's Landfill Methane Outreach Program (LMOP) has participated in an ongoing effort to gather information on Municipal Solid Waste landfills (MSW). A key component of the LMOP is to provide MSW landfill owners and operators, project developers, utilities, and other potential project participants with information on MSW landfills that may offer attractive energy development opportunities. This document presents state specific landfill information, hereinafter referred to as the landfill profiles. These profiles are useful to evaluate the potential for developing landfill gas-toenergy projects (LFGTE). EPA assembled this information from state and local sources as well as various national solid waste publications, landfill owners and operators, and project developers.

The EPA has prepared a separate document to describe the methodology used to develop the state-specific landfill profiles and estimate the benefits of using LFGTE as an energy source. The document, Landfill Gas-to-Energy Project Opportunities, Background Information on Landfill Profiles, contains background information on gas collection and use, describes the data fields according to the five sections listed on the landfill profiles, and where applicable, illustrates calculations and default values used to derive estimates. EPA strongly recommends that users read the document prior to using the landfill profiles. Users can obtain the document by calling the LMOP hotline at 1-888-STAR-YES.

#### **Data Sources**

- EPA-ORD Landfill Gas Utilization-Survey (Thorneloe, 1997)
- Directory and Atlas of Solid Waste Disposal Facilities (SWA, 1994)
- Implementation Guide for Landfill Gas Recovery Projects in the Northeast (SCS, 1994)
- Landfill Gas-to-Energy 1994-1995 Activity Report (SWT, 1994)
- Methane Recovery from Landfill Yearbook (GAA, 1994)
- · Project developers, landfill owners, and operators
- · State and local records
- · Survey of Landfill Gas Generation Potential (EPRI, 1992)
- U.S. Landfill Directory (SWANA, 1992)

#### **Landfill Classification**

To facilitate the use of available landfill information, EPA has categorized the landfills into five categories: Current Project, <sup>1</sup> Candidate Project, Shutdown, Other, and Unknown waste-in-place (WIP). These categories are based on the status of the landfill's LFGTE project(s) and WIP. The generation of methane is a function of many factors, the most critical being the amount of waste-in-place and the number of years the waste has been in the landfill. Peak methane generation occurs soon after closure; therefore, the longer the landfill has been closed, the less attractive it becomes for methane recovery. Based on the general timing of peak methane generation, EPA assumes that landfills that ceased accepting waste prior to 1993 have a low probability of generating enough methane to make a gas recovery project economical. Consequently, landfills need to be operating in 1993 to be considered as having a Candidate Project.

#### Landfill Categorizes

#### **Current Project:**

 Landfill with operational LFGTE project or landfill with LFGTE project under construction.

#### Candidate Project:

- Landfill with a potential or planned LFGTE utilization project; or
- Landfill is currently operating or closed after 1993; and has more than 1,000,000 tons of municipal solid waste-inplace.<sup>2</sup>

#### Shutdown:

· Landfill with shutdown LFGTE project.

#### Other

 Landfill has less than 1,000,000 tons of municipal solid waste-in-place with no current or planned LFGTE project.

#### Unknown WIP:

 Landfill with insufficient data to determine the waste-inplace

### **State Summary**

State-specific landfill profile information is summarized in three exhibits. Exhibit 1 presents a summary of the state-specific potential for LFG utilization energy by landfill category. Exhibit 2 summarizes the emissions avoided by fossil fuel displacement for electricity generation and direct use projects. Exhibit 3 presents an index of the state-specific MSW landfills, referenced by category, landfill name and general characteristics.

<sup>&</sup>lt;sup>2</sup> By modeling the relationship between WIP and methane generation, a cut-off of 1,000,000 tons of WIP was established; landfills having at least 1,000,000 tons of WIP are considered candidate landfills.



<sup>&</sup>lt;sup>1</sup> Current projects illustrate the wide range of successful project development options.

# **Exhibit 1: Oregon MSW Landfill Summary**

Category	No. of	Est. Capaci	ty Potential	Est. CH4	Methane Reduction (tons/yr)				
	Landfills	Electricity (MW)	Gas Capacity (mmBtu/hr)	Generation (mmscf/d)			Reduction (tons/yr)		
				Ī	Potential	Current	Potential	Current	
Current	4	16	164	5	30,307	6,167	636,453	129,507	
Candidate	5	20	197	6	36,480	0	766,086	0	
Other	3	3	35	1	6,458	0	135,612	0	
Total	12	40	396	13	73,245	6,167	1,538,151	129,507	

## **Exhibit 2: Potential Oregon Emissions Avoided by Fossil Fuel Displacement**

Category		Electricity Generation Project					Direct Use Project					
	CO2 (tons/yr)		yr)	SO2 (tons/yr)		CO2 (tons/yr)			SO2 (tons/yr)			
	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas
Current	128,652	105,592	71,001	813	680	0	91,267	74,907	50,369	831	437	0
Candidate	156,277	128,265	86,247	988	826	0	109,855	90,164	60,628	1,000	526	1
Other	26,836	22,025	14,810	170	142	0	19,446	15,961	10,732	177	93	0
Total	311,764	255,882	172,058	1,971	1,647	0	220,568	181,033	121,729	2,007	1,055	1

# **Exhibit 3: Index of Landfills in Oregon**

Category	Landfill Name		WIP		Landfill	LFG Collected	-	Status of LFGTE
		<2.5 million tons	2.5 to 4 million tons	>4 million tons	Operating in 1998		Utilization Project	Project
Current	Coffin Butte LF			<b>✓</b>	<b>✓</b>	<b>✓</b>	✓	Operational
Current	River Bend Sanitary LF		✓		<b>✓</b>	✓	✓	Operational
Current	Short Mountain LF		✓		<b>✓</b>	✓	✓	Operational
Current	St. Johns LF			<b>✓</b>			<b>✓</b>	Operational
Candidate	Columbia Ridge LF			<b>✓</b>	<b>✓</b>			Unknown
Candidate	Klamath Falls LF	<b>✓</b>			<b>✓</b>			Unknown
Candidate	Knott Pit LF	<b>✓</b>			<b>✓</b>			Potential
Candidate	Northern Wasco County LF	<b>✓</b>			<b>✓</b>			Unknown
Candidate	Roseburg LF	<b>✓</b>			<b>✓</b>			Unknown
Other	Finley Buttes LF	✓			<b>✓</b>			Unknown
Other	Milton-Freewater LF	✓			<b>✓</b>			Unknown
Other	Pendleton LF	✓			<b>✓</b>			Unknown

OR - 3 December 05, 1998

		Coffin Butte	e LF		Landfill Categor	ry: Current
	<b>A.</b> G	ENERAL LANDFILL	INFORMATI	ION		
Landfill Owner:	Valley Landfills, Incor	porated	Annual Accept	ance Rate (to	ons):	250,000
Landfill Owner Type:	Private		Year Annual A	cceptance Ra	ate Reported:	1995
Alternative Landfill Name:			Design Capaci	ty (tons):		1,000,000
City:	Corvalis		Acres Currentl	y Landfilled	(acres):	61
County:	Benton		Average Depth	(feet):		
State:	OR		1995 Waste-in	-Place (tons)	):	3,400,000
Year Open:	1978		1998 Waste-in-	Place (tons).	:	4,150,000
Year Closed:	2002					
		B. LANDFILL GAS CO	OLLECTION			
Estimated Methane Generatio	n (mmscf/d):		1.48			
LFG Collection System Status	3:	O	perational			
Current LFG Collected (mmsc	cf/d):					
Collection and Treatment Syst	tem Required Under NS	PS/EG:	No			
		C. LANDFILL GAS U	TILIZATION			
Current Utilization:						
Utilization System Status	: Operational					
Utilization System Type:	Reciprocati	ng Engine				
Utilization System Start	Year: 1996					
Electric Utility Provider(						
Natural Gas Provider(s):						
Energy Purchaser(s):	Pacific Nor	thwest Generating Coope	erative			
				\D.	D' III D' III	<i>a</i> . >
Capacity:		ity Generation Project (N		OR	Direct Use Project (mmBtu	ı/hr)
Estimated Potential Capa	acity:		5			46
Current Capacity:			2.4			
Planned Capacity:						
Utilities in County:	Bonneville	Power Admin; Consume	rs Power Inc; F	Pacificorp		
	D. ENVI	RONMENTAL BENEI	TITS OF UTIL	LIZATION		
		Po	otential		Current	
Methane Reduction (tons/yr):				8,554		0
CO2 Equivalent of CH4 Redu	ction (tons/yr):		1	179,626		0
				,		
Emissions Avoided by Fossil I	Fuel Displacement:	Electricity Gen	=		Direct Use Proj	ect
		CO2 (tons/yr)	SO2 (ton	is/yr)	CO2 (tons/yr)	SO2 (tons/yr)
	Coal:	36,307		230	25,758	234
	Fuel Oil:	29,799		192	21,141	123
	Natural Gas:	20,037		0	14,216	0
	Transit Gust	E. CONTACT INFO	PMATION		1,210	
	Landfill		KWIATION		Landfill Operator	
Contact Name: Brian	Stone, Operations Mana		Brian	Stone Opera	itions Manager	
Brian	-	501		_	mons managor	
Mailing Address: P.O. B	Sox 807		P.O. E	30x 807		
Phone Number: 541 7	15-2018		5/11 7	45-2018		
Phone Number: 541-74 Fax Number:	45-2018			45-2018 45-3826		

\* Itallicized indicates values estimated by EPA.

December 5, 1998

State: OR

Page:

			Columbia Ridge	e LF		Landfill Cat	egory: Candidate
		A. GI	ENERAL LANDFILL II		ON		
Landfill Owner: Landfill Owner Type:	WM Di Private	isp. Services of C		-	ance Rate (to	ons): ate Reported:	1,670,000 1998
Alternative Landfill N	lame:		De	esign Capaci	y (tons):		10,300,000
City:	Arlingt	on	A	cres Currentl	y Landfilled	(acres):	650
County:	Gilliam	ı	A	verage Depth	(feet):		
State:	OR		W	aste-in-Place	(tons):		8,120,000
Year Open:	1990		19	98 Waste-in	Place (tons)	:	10,440,000
Year Closed:	2002						
		E	3. LANDFILL GAS COI	LLECTION			
Estimated Methane G		f/d):		3.09			
LFG Collection System							
Current LFG Collecte							
Collection and Treatm	nent System Requ			No			
		(	C. LANDFILL GAS UTI	LIZATION			
Current Utilization:							
Utilization System		Unknown					
Utilization System	• •	Unknown					
Utilization System							
Electric Utility P	rovider(s):						
Natural Gas Prov	rider(s):						
Energy Purchases	r(s):						
Capacity:		Electricit	y Generation Project (MV	V) C	PR	Direct Use Project (mn	nBtu/hr)
Estimated Potent	ial Capacity:			10			97
Current Capacity	:						
Planned Capacity	<b>/:</b>						
Utilities in County:		Bonneville P	ower Admin; Columbia E	Basin Elec Co	op Inc; Pacit	ficorp; Wasco Electric (	Coop Inc
		D. ENVIR	ONMENTAL BENEFI	rs of util	IZATION		
			Pote	ntial		Curre	ent
Methane Reduction (to	ons/yr):				17,855		0
CO2 Equivalent of CH		ns/yr):		3	74,959		0
		-					
Emissions Avoided by	Fossil Fuel Disp	placement:	Electricity Gener	=		Direct Use I	-
			CO2 (tons/yr)	SO2 (tor	s/yr)	CO2 (tons/yr)	SO2 (tons/yr)
		Coal:	76,560		484	53,769	489
		Fuel Oil:	62,837		405	44,131	257
	N	atural Gas:	42,252		0	29,674	0
			E. CONTACT INFOR	MATION			
		Landfill (				Landfill Operator	
Contact Name:	Doris Bjorn			Doris	Bjorn		
Mailing Address:	18177 Cedar S	nrings I ane			Cedar Sprin	σs Lane	
maning Addiess.	101// Cedal S	prings Lane		101//	Codai Spriii	65 Lanc	
Phone Number:	541-454-2030			541-4	54-2030		
Fax Number:					54-3312		

\* Itallicized indicates values estimated by EPA. December 5, 1998 State: OR

Page:

2



			Klamath Falls	LF		Landfill Category	: Candidate
		A. G	ENERAL LANDFILL IN		ION		
Landfill Owner:	Klamat	h County	Δι	nual Accept	ance Rate (to	ons):	75,000
Landfill Owner Type:	Public	ii County		-		ate Reported:	1998
Alternative Landfill N				esign Capaci	-	and responded.	1,540,000
City:	Bonanz	a			y Landfilled	(acres):	60
County:	Klamat			verage Depth	-	(deres).	00
State:	OR			aste-in-Place			1,100,000
Year Open:	1977				-Place (tons)	:	1,210,000
Year Closed:	2007				(,		, .,
		]	B. LANDFILL GAS COI	LECTION			
Estimated Methane Ge	eneration (mmsc	f/d):		0.73			
LFG Collection Syster	· -	,					
Current LFG Collected							
Collection and Treatm	` ′	aired Under NSI	PS/EG:	No			
			C. LANDFILL GAS UTI	LIZATION			
Current Utilization:							
Utilization Syster	n Status:	Unknown					
Utilization Syster		Unknown					
Utilization Syster	• •						
Electric Utility Pr							
Natural Gas Prov							
Energy Purchaser							
	(*).						
Capacity:		Electrici	ity Generation Project (MV	V) C	)R	Direct Use Project (mmBtu/	hr)
Estimated Potenti	ial Capacity:			2			23
Current Capacity:	:						
Planned Capacity	:						
Utilities in County:		Bonneville I	Power Admin; Midstate El	ectric Coon l	Inc: Pacifico	n	
Ctinates in County.			RONMENTAL BENEFIT				
		D. ERVII	I		ZIZATION		
Mal Date (	( )		Pote	ntial	4.206	Current	0
Methane Reduction (to	= '	( )			4,206		0
CO2 Equivalent of CH	14 Reauction (to)	ns/yr):			88,326		0
Emissions Avoided by	Fossil Fuel Disp	olacement:	Electricity Gener	ation Projec	t	Direct Use Proje	ct
	•		CO2 (tons/yr)	SO2 (tor			O2 (tons/yr)
		Coal:	18,153		115	12,666	115
		Fuel Oil:	14,899		96	10,395	61
	N	atural Gas:	10,019		0	6,990	0
	14	——————————————————————————————————————	E. CONTACT INFOR	MATION		0,770	0
		Landfill		MATION		Landfill Operator	
Contact Name:	Voith Dood Di		o wher	Voith	Read, Direct		
	Keith Read, Di					OI.	
Mailing Address:	3735 Shasta W	ay		3735 \$	Shasta Way		
Phone Number:	541-883-4696			541-8	83-4696		
Fax Number:					82-3046		
Tax Tumbot.				341-0	U2-JU <del>1</del> U		

\* Itallicized indicates values estimated by EPA. December 5, 1998 State: OR Page: 3



			Knott Pit LI	<u> </u>		Landfill Category:	Candidate
		A. Gl	ENERAL LANDFILL I		ON		
Landfill Owner:	Deschu	ites County		nnual Accept		ons):	80,000
Landfill Owner Type:	Public		Y	ear Annual A	cceptance Ra	ate Reported:	1998
Alternative Landfill Na	ame:		D	esign Capacit	y (tons):		1,500,000
City:	Bend		A	cres Currentl	y Landfilled	(acres):	130
County:	Deschu	ites	A	verage Depth	(feet):		
State:	OR		W	aste-in-Place	(tons):		1,690,000
Year Open:	1971		19	998 Waste-in-	Place (tons)	:	1,820,000
Year Closed:	2007						
		I	B. LANDFILL GAS CO	LLECTION			
Estimated Methane Ge	neration (mmsc	f/d):		0.88			
LFG Collection System	n Status:						
Current LFG Collected	l (mmscf/d):						
Collection and Treatme	ent System Requ			No			
			C. LANDFILL GAS UT	ILIZATION			
Current Utilization:							
Utilization System	n Status:	Potential					
Utilization System	n Type:	Unknown					
Utilization System	n Start Year:						
Electric Utility Pr	ovider(s):						
Natural Gas Provi	der(s):						
Energy Purchaser	(s):						
Capacity:		Electrici	ty Generation Project (M	W) C	R	Direct Use Project (mmBtu/h	r)
Estimated Potenti	al Capacity:			3			28
Current Capacity:							
Planned Capacity							
Utilities in County:		Ronneville F	Power Admin: Central Fle	etric Coop In	c: Harney El	ectric Coop Inc; Midstate Ele	etric Coo
Othities in County.				•		ectric Coop me, witastate Ele	cure coo
		D. ENVIR	CONMENTAL BENEFI		AZATION		
			Pote	ential		Current	
Methane Reduction (to	= :				5,108		0
CO2 Equivalent of CH	4 Reduction (to	ns/yr):		1	07,268		0
Emissions Avoided by	Fossil Fuel Dist	olacement:	Electricity Gene	ration Projec	t	Direct Use Projec	rt .
Zinissions rivolaca by	r ossii r iici Bisp	racement.	CO2 (tons/yr)	SO2 (ton	I .		D2 (tons/yr)
		Coal:	22,100	502 (1011	140	15,382	140
		Fuel Oil:			117		74
			18,139		117	12,625	/4
	N	latural Gas:	12,197		0	8,489	0
			E. CONTACT INFOR	MATION	,		
		Landfill (	Owner			Landfill Operator	
Contact Name:	Tim Schimke,	Director		Tim S	chimke, Dire	ector	
Mailing Address:	61000 SE 27th	St.		61000	SE 27th St.		
				31000			
Phone Number:	541-317-3163			541-3	17-3163		
Fax Number:							
rax mulliber:	541-317-3959			341-3	17-3959		

\* Itallicized indicates values estimated by EPA.

STAR

December 5, 1998

State: OR

Page:

4

			Northern Wasco Cou	ınty LF		Landfill Cate	gory:	Candidate
		A. GI	ENERAL LANDFILL IN		ION			
Landfill Owner:	USA W	Vaste Cascade Di	strict An	nual Accep	tance Rate (to	ns):		95,000
Landfill Owner Type:	Private			-	Acceptance Ra			1998
Alternative Landfill N	ame: The Da	lles Landfill	De	sign Capaci	ty (tons):			366,286
City:	The Da	illes	Ac	res Currentl	y Landfilled (a	acres):		170
County:	Wasco		Av	erage Deptl	(feet):			
State:	OR		Wa	aste-in-Place	e (tons):			1,600,000
Year Open:	1972		199	98 Waste-in	-Place (tons):			1,728,000
Year Closed:	2001							
		В	. LANDFILL GAS COL	LECTION				
Estimated Methane Ge	eneration (mmsc	f/d):		0.86				
LFG Collection System	m Status:							
Current LFG Collected	d (mmscf/d):							
Collection and Treatm	ent System Requ	uired Under NSP	S/EG:	No				
		(	C. LANDFILL GAS UTI	LIZATION				
Current Utilization:								
Utilization System	m Status:	Unknown						
Utilization System	m Type:	Unknown						
Utilization Syster	m Start Year:							
Electric Utility Pr	rovider(s):							
Natural Gas Prov	rider(s):							
Energy Purchaser	r(s):							
Capacity:		Electricit	y Generation Project (MW	<sup>7</sup> ) (	OR I	Direct Use Project (mm	Btu/hı	:)
Estimated Potent	ial Capacity:			3				27
Current Capacity	:							
Planned Capacity	<i>'</i> :							
Utilities in County:		Bonneville P	ower Admin; Central Elec	tric Coop Ir	ıc; Northern W	Vasco County P U D; W	asco i	Electric
•			ONMENTAL BENEFIT			•		
			Poter			Curre	nt	
   Methane Reduction (to	ons/vr)·		1 0161	ıııcıı	4,972	Curre	111	0
CO2 Equivalent of CH	• .	ns/vr)·			104,412			0
CO2 Equivalent of CI	- Treatmenton (10)				101,112			
Emissions Avoided by	Fossil Fuel Disp	placement:	Electricity Genera	ation Projec	rt	Direct Use F	Project	<b>t</b>
			CO2 (tons/yr)	SO2 (to	ıs/yr)	CO2 (tons/yr)	SO	2 (tons/yr)
		Coal:	21,311		135	14,973		136
		Fuel Oil:	17,491		113	12,289		72
	λ	latural Gas:	11,761		0	8,263		0
	- '		E. CONTACT INFORM	MATION				
		Landfill (		MATION		Landfill Operator		
Contact Name:	lim Torr Cita			lim T	orr Sito Mono			
	Jim Tarr, Site	_			arr, Site Mana	gu		
Mailing Address:	2550 Steele Ro	1.		2550	Steele Rd.			
DI N. I								
Phone Number:	541-296-4082			541-2	96-4082			
Fax Number:								

\* Itallicized indicates values estimated by EPA. December 5, 1998 State: OR Page: 5



Martin   Name   Private   Year Animal Acceptance Rate Reported:   1998				River Bend S	-			Landfill Cat	egory: Current
Para			A. G	ENERAL LANDFIL	L INFOR	RMATI	ON		
Alternative Landfill Name	Landfill Owner:	Riverbo	end Landfill Con	npany Incorporated	Annual .	Accept	ance Rate	(tons):	330,000
City:   McMinnville   Acres Currently Landfilled (acres):   450	Landfill Owner Type:	Private			Year An	nnual A	cceptance	Rate Reported:	1998
Caunty   Vamihi    Average Depth (feet)   State:   OR   1935 Waste-in-Place (tons):   2,300,000	Alternative Landfill Na	ame:			Design (	Capacit	y (tons):		4,200,000
State: OR	City:	McMin	nville		Acres C	urrently	y Landfille	ed (acres):	450
Year Clopen:   1982   1998   Wasse-in-Place (tons):   2,900,000	County:	Yamhi	11		Average	Depth	(feet):		
Section   Sect	State:	OR			1995 W	aste-in	-Place (tor	ns):	2,300,000
B. LANDFILL GAS COLLECTION	Year Open:	1982			1998 Wa	aste-in-	Place (ton	s):	2,900,000
Estimated Methane Generation (mmscfd): 1.16 LFG Collection System Status: Operational Current LFG Collected (mmscfd): No  Current LFG Collected (mmscfd): No  Current LFG Collected (mmscfd): No  Current Utilization Utilization System Status: Operational Utilization System Status: 1998 Electric Utility Provider(s): No  Capacity: Leachate Evaporation Utilization System Stat Year: 1998 Electric Utility Provider(s): Natural Gas Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtw/hr)  Estimated Potential Capacity: 4 36  Current Capacity: Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo  DENVIRONMENTAL BENEFITS OF UTILIZATION  Methane Reduction (tons/yr): 6,705 OUTILIZATION  Methane Reduction (tons/yr): 140,807 OUTILIZATION  Methane Reduction (tons/yr): 140,807 OUTILIZATION  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/	Year Closed:	2020							
Current LFG Collection System Status:			I	B. LANDFILL GAS	COLLEC	TION			
Current LFG Collected (mmscfid):  Collection and Treatment System Required Under NSPS/FIG:    Canobilla Gas Utilization	Estimated Methane Ge	eneration (mmsc	f/d):		1.1	16			
Collection and Treatment System Required Under NSPS/EG: No  C. LANDFILL GAS UTILIZATION  Utilization System Status: Operational Utilization System Statu Year: 1998 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: A Signature Capacity: Planned Capacity: Planned Capacity: Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo  D. ENVIRONMENTAL BENEFITS OF UTILIZATION  Methame Reduction (tons/yr): 6,705 United Signature of CH4 Reduction (tons/yr): 140,807 0  Emissions Avoided by Fossil Fuel Displacement: Electricity Generation Project CO2 (tons/yr) SO2 (tons/yr) SO3 (tons/yr)  Endition of CH4 Reduction (tons/yr): Coal: 28,414 180 20,192 184  Fuel Oil: 23,321 150 16,572 97  Natural Gas: 15,681 0 11,144 0  Excent Econtact Name: Dan Wilson, Site Manager Dan Wilson, Site Manager SO3-472-3176  Fonce Number: 503-472-3176  Fonce Number: 503-472-3176					Operation	al			
Current Utilization System Status: Operational Utilization System Status: 1998   Leachate Evaporation   Utilization System Type: Leachate Evaporation   Utilization System Start Year: 1998   Electric Utility Provider(s):   Satural Gas Provider(s):   Energy Purchaser(s):   Capacity:   Electricity Generation Project (MW)   OR   Direct Use Project (mmBtu/hr)    Estimated Potential Capacity:   4   36   Current Capacity:   Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo      D. ENVIRONMENTAL BENEFITS OF UTILIZATION		` '							
Current Utilization System Status:  Utilization System Status: Utilization System Status: Utilization System Status: Utilization System Start Year: Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Eastimated Potential Capacity: Current Capacity: Planned Capacity: Planned Capacity: Utilities in County:  Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo  D. ENVINOMENTAL BENEFITS OF UTILIZATION  Potential Methane Reduction (tons/yr):  CO2 Equivalent of CH4 Reduction (tons/yr): Emissions Avoided by Fossil Fuel Displacement:  Co2 Equivalent of CH4 Reduction (tons/yr):  Emissions Avoided by Fossil Fuel Displacement:  Co2 (tons/yr)  Co3 (tons/yr)  Co4 (28,414 180 20,192 184  Fuel Oil: 23,321 150 16,572 97  Natural Gas: 15,681 0 11,144 0  DECOS (Tons/yr)  Landfill Owner Landfill Owner Landfill Owner Landfill Operator  E. CONTACT INFORMATION  Landfill Owner Landfill Owner Landfill Operator  Southwest Highway 18  Phone Number: 503,472-3176  Southwest Highway 18	Collection and Treatme	ent System Req							
Utilization System Type: Leachate Evaporation Utilization System Start Yea: 1998 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s):  Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)  Estimated Potential Capacity: Planned Capacity: Planned Capacity: Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo  D. ENVINOMENTAL BENEFITS OF UTILIZATION  Potential 6,705 0 Green Group Gro				C. LANDFILL GAS	UTILIZA	TION			
Utilization System Type:	Current Utilization:								
Utilization System Start Year:   1998			-						
Electric Utility Provider(s):   Natural Gas Provider(s):   Energy Purchaser(s):   Capacity:	Utilization System	n Type:	Leachate Ev	aporation					
Natural Gas Provider(s):   Energy Purchaser(s):	Utilization System	n Start Year:	1998						
Energy Purchaser(s):   Capacity:   Electricity Generation Project (MW)   OR   Direct Use Project (mmBtw/hr)									
Electricity Generation Project (MW)   OR   Direct Use Project (mmBtu/hr)	Natural Gas Provi	ider(s):							
Estimated Potential Capacity:   Quirrent Capacity:   Planned Capacity:   Planned Capacity:   Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo   D. ENVIRONMENTAL BENEFITS OF UTILIZATION	Energy Purchaser	r(s):							
Current Capacity:   Planned Capacity:	Capacity:		Electrici	ty Generation Project	(MW)	O	R	Direct Use Project (mn	nBtu/hr)
Current Capacity:   Planned Capacity:	Fstimated Potenti	ial Canacity:			Δ	1			36
Planned Capacity:   Utilities in County:   Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo					7	•			30
Description   County:   Bonneville Power Admin; McMinnville Water & Light; Portland General Electric Co; Tillamook Peo									
D. ENVIRONMENTAL BENEFITS OF UTILIZATION		•							
Potential   Current   Current   Current   G,705   0   0	Utilities in County:								Tillamook Peo
Methane Reduction (tons/yr):         6,705         0           CO2 Equivalent of CH4 Reduction (tons/yr):         140,807         0           Emissions Avoided by Fossil Fuel Displacement:         Electricity Generation Project CO2 (tons/yr)         Direct Use Project CO2 (tons/yr)         SO2 (			D. ENVIR	RONMENTAL BEN	EFITS OF	F UTIL	IZATION	<b>N</b>	
The property of the project					Potential			Curr	
Emissions Avoided by Fossil Fuel Displacement:    Electricity Generation Project   CO2 (tons/yr)   SO2 (tons/y		• .							
CO2 (tons/yr)   SO2 (tons/yr)   CO2 (tons/yr)   SO2 (tons/yr	CO2 Equivalent of CH	4 Reduction (to	ns/yr):			1	40,807		0
CO2 (tons/yr)   SO2 (tons/yr)   CO2 (tons/yr)   SO2 (tons/yr	Fmissions Avoided by	Fossil Fuel Dist	nlacement:	Flectricity G	Generation	Project	<i>t</i>	Direct Use	Project
Coal:         28,414         180         20,192         184           Fuel Oil:         23,321         150         16,572         97           E. CONTACT INFORMATION           Landfill Owner         Landfill Operator           Contact Name:         Dan Wilson, Site Manager         Dan Wilson, Site Manager           Mailing Address:         13469 Southwest Highway 18         13469 Southwest Highway 18           Phone Number:         503-472-3176         503-472-3176	Emissions Tivotaca by	r ossii r iici Disp	succinent.	•					=
Fuel Oil: 23,321   150   16,572   97     Natural Gas: 15,681   0   11,144   0     E. CONTACT INFORMATION     Landfill Owner   Landfill Operator     Contact Name: Dan Wilson, Site Manager   Dan Wilson, Site Manager     Mailing Address: 13469 Southwest Highway 18   13469 Southwest Highway 18     Phone Number: 503-472-3176   503-472-3176     Fax Number:			G 1	•		02 (1011		, , ,	, ,
Natural Gas: 15,681 0 11,144 0									184
E. CONTACT INFORMATION  Landfill Owner Landfill Operator  Contact Name: Dan Wilson, Site Manager Mailing Address: 13469 Southwest Highway 18 13469 Southwest Highway 18  Phone Number: 503-472-3176 503-472-3176  Fax Number:			Fuel Oil:	23,32	1		150	16,572	97
Landfill Owner  Contact Name: Dan Wilson, Site Manager Mailing Address: Dan Wilson, Site Manager 13469 Southwest Highway 18 13469 Southwest Highway 18  Phone Number: 503-472-3176  Fax Number: Landfill Operator  Dan Wilson, Site Manager 13469 Southwest Highway 18  503-472-3176		Λ	latural Gas:	15,68	1		0	11,144	0
Contact Name: Dan Wilson, Site Manager Dan Wilson, Site Manager 13469 Southwest Highway 18 13469 Southwest Highway 18  Phone Number: 503-472-3176 503-472-3176  Fax Number:					FORMAT	ION		1	
Mailing Address: 13469 Southwest Highway 18 13469 Southwest Highway 18  Phone Number: 503-472-3176 503-472-3176			Landfill	Owner				Landfill Operator	
Phone Number: 503-472-3176 503-472-3176 Fax Number:	Contact Name:	Dan Wilson, S	ite Manager			Dan W	ilson, Site	Manager	
Fax Number:	Mailing Address:	13469 Southw	est Highway 18			13469	Southwes	t Highway 18	
Fax Number:	Dhana Namaha								
	rnone Number:	503-472-3176				503-47	72-3176		
Itallicized indicates values estimated by EPA. December 5, 1998 State: OR Page: 6	Fax Number:								
	* Itallicized indicates v	alues estimated	by EPA.		December	5, 1998	3	State: OR	Page: 6

<sup>\*</sup> Itallicized indicates values estimated by EPA.

			Rosebur	g LF		Landfill Cat	egory: Candidate
		A. G	ENERAL LANDFIL	L INFORM	MATION		
Landfill Owner:	Dougla	s County Southv	vest Administration	Annual A	cceptance Rate	(tons):	97,700
Landfill Owner Type:	Public			Year Ann	ual Acceptance	Rate Reported:	1998
Alternative Landfill N	ame:			Design Ca	apacity (tons):		480,000
City:	Rosebu	rg		Acres Cur	rrently Landfille	ed (acres):	35
County:	Dougla	s		Average I	Depth (feet):		
State:	OR			1995 Wa	ste-in-Place (tor	ns):	1,075,000
Year Open:	1975			1998 Was	te-in-Place (ton	s):	1,300,000
Year Closed:	2007			2011 H 200	7017		
			B. LANDFILL GAS				
Estimated Methane Ge		f/d):		0.75			
LFG Collection Syster							
Current LFG Collected							
Collection and Treatm	ent System Requ			No			
			C. LANDFILL GAS	UTILIZAT	TON		
Current Utilization:							
Utilization Syster		Unknown					
Utilization Syster		Unknown					
Utilization Syster							
Electric Utility Pr							
Natural Gas Prov							
Energy Purchaser	r(s):						
Capacity:		Electrici	ty Generation Project	(MW)	OR	Direct Use Project (mn	nBtu/hr)
Estimated Potenti	ial Capacity:			2			24
Current Capacity:				_			
Planned Capacity							
Utilities in County:						os-Curry Electric Coop II	nc; Douglas Ele
		D. ENVII	RONMENTAL BENI	EFITS OF	UTILIZATION		
				Potential		Curre	
Methane Reduction (to	- ·				4,339		0
CO2 Equivalent of CH	4 Reduction (to	ns/yr):			91,121		0
Emissions Avoided by	Fossil Fuel Dist	olacement:	Electricity G	eneration P	roject	Direct Use	Project
			CO2 (tons/yr)		2 (tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
		Coal:	18,153		115	13,067	119
		Fuel Oil:	14,899		96	10,724	63
	<b>3.</b>						
		atural Gas:	10,019		0	7,211	0
		Landfill	E. CONTACT INF	FORMATIO	ON	Landfill Operator	
Contact Name:	T	Landini	Jwilei				
Contact Name.	Terri Peterson				Chuck Cates, En	vironmental Coordinator	
Mailing Address:	1036 SE Doug	las Ave. #219		1	036 SE Douglas	s Ave. #219	
Dhana Nan							
Phone Number:	541-440-4350			5	41-440-4526		
Fax Number:							
* Itallicized indicates v	alues estimated	by EPA.	]	December 5	, 1998	State: OR	Page: 7

<sup>\*</sup> Itallicized indicates values estimated by EPA.

STAR Version 1.0 / LMOP

					1. 1011.0			
		A C	Short Mountain LF ENERAL LANDFILL INFO	DRMATION	Landfill Categor	y: Current		
7 1011 0						240.000		
Landfill Owner:	Lane Co	ounty		al Acceptance Rate (		240,000		
Landfill Owner Type: Alternative Landfill N	Public			Annual Acceptance In Capacity (tons):	Rate Reported:			
City:			_	Currently Landfille	d (agres):	64		
County:	Eugene Lane			ge Depth (feet):	u (acres):	160		
State:	OR			Waste-in-Place (ton	6).	3,410,000		
Year Open:	1976			Waste-in-Place (tons	•	3,410,000		
Year Closed:	2014		1,70	rasic in Frace (ton.	<i>.</i>	3,410,000		
Teur Closed.	2014	I	B. LANDFILL GAS COLLE	CCTION				
Estimated Methane Ge	neration (mmsc	f/d):	1	1.29				
LFG Collection System		,,,-	Operation					
Current LFG Collected			-	1.6				
Collection and Treatm		ired Under NSF	PS/EG:	Yes				
			C. LANDFILL GAS UTILIZ	ZATION				
Current Utilization:								
Utilization Syster	n Status:	Operational						
Utilization Syster		Reciprocatin	g Engine					
Utilization Syster		1992						
Electric Utility Pr		Emerald Peo	ples Utility District					
Natural Gas Prov		):						
Energy Purchaser	(s):	Emerald Peoples Utility District						
Capacity:		Flectrici	ty Generation Project (MW)	OR	Direct Use Project (mmBtu	/hr)		
	: -1 C	Licetiei	ty Generation Project (1979)		Direct Ose Froject (illinibita			
Estimated Potenti Current Capacity:				3.2		40 33		
Planned Capacity			2	5.2		33		
1 faimed Capacity	•							
Utilities in County:								
		D. ENVIR	RONMENTAL BENEFITS (	OF UTILIZATION				
			Potentia	l	Current			
Methane Reduction (to	ons/yr):			7,459		6,167		
CO2 Equivalent of CH	4 Reduction (to	ns/yr):		156,645		129,507		
Emissions Avoided by	Fossil Fuel Disc	lacement:	Electricity Generatio	n Project	Direct Use Proje	act		
Emissions Avoided by	rossu ruei Disp	лисетені.		SO2 (tons/yr)	_	SO2 (tons/yr)		
		Coal:	31,571	200	22,463	204		
		Fuel Oil:	25,912	167	18,436	107		
	N	atural Gas:	17,424	0	12,397	0		
			E. CONTACT INFORMA	TION	,			
		Landfill (			Landfill Operator			
Contact Name:	Ken Kohl							
Mailing Address:	3100 E. 17th A	ve						
Phone Number:	#11 202 · · · ·							
rnone number:	541-682-4120			503-687-4120				
Fax Number:								

\* Itallicized indicates values estimated by EPA. December 5, 1998 State: OR Page: 8



St. Johns LF Landfill Category: Current A. GENERAL LANDFILL INFORMATION Landfill Owner: Portland Metro Annual Acceptance Rate (tons): Landfill Owner Type: Public Year Annual Acceptance Rate Reported: Alternative Landfill Name: Design Capacity (tons): City: Portland Acres Currently Landfilled (acres): 220 County: Multnomah Average Depth (feet): 65 State: OR Waste-in-Place (tons): 1998 Waste-in-Place (tons): 13,839,604 Year Open: Year Closed: 1991 **B. LANDFILL GAS COLLECTION** Estimated Methane Generation (mmscf/d): 1.31 LFG Collection System Status: Current LFG Collected (mmscf/d): Collection and Treatment System Required Under NSPS/EG: No C. LANDFILL GAS UTILIZATION Current Utilization: **Utilization System Status:** Operational Direct Thermal Utilization System Type: Utilization System Start Year: 1998 Electric Utility Provider(s): Natural Gas Provider(s): Energy Purchaser(s): Ash Grove Cement Company Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr) Estimated Potential Capacity: 4 41 100 **Current Capacity:** Planned Capacity: Utilities in County:

Capacity:

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	Pote	ntial	Curre	ent
Methane Reduction (tons/yr):		7,589		0
CO2 Equivalent of CH4 Reduction (tons/yr):		159,375		0
Emissions Avoided by Fossil Fuel Displacement:	Electricity Gener	ration Project	Direct Use	Project
	CO2 (tons/yr)	SO2 (tons/yr)	CO2 (tons/yr)	SO2 (tons/yr)
Coal:	32,360	205	22,854	208
Fuel Oil:	26,560	171	18,758	109
Natural Gas:	17,859	0	12,613	0
	E CONTACT INFOD	MATION	1	

E. CONTACT INFORMATION

Landfill Owner Landfill Operator Contact Name:

Paul Ehringer, Landfill Manager Mailing Address: 600 NE Grand Ave

Phone Number: 503-797-1795 503-797-1795

Fax Number: 503-797-1789

\* Itallicized indicates values estimated by EPA. December 5, 1998 State: OR Page:

